THE YOUTH POPULATION DECLINE AND PROSPECTS FOR MILITARY RECRUITING IN THE 1990s

Staff Working Paper

March 1987

The Congress of the United States
Congressional Budget Office

J932-12

PREFACE

Despite continuing successes in recruiting for the active enlisted forces, the ongoing decline in the size of the enlistment-age youth population has remained a cause for concern about the quality of recruits that the services will be able to attract in the 1990s. Some observers see the New GI Bill, authority for which is due to expire in 1988, as a significant aid to recruiting. To assist it in its deliberations on extending authority for the New GI Bill, the Subcommittee on Manpower and Personnel of the Senated Armed Services Committee asked the Congressional Budget Office (CBO) to provide projections of recruit quality in the 1990s. This paper presents those projections.

Richard L. Fernandez of CBO's National Security Division prepared the report under the general supervision of Robert F. Hale and Neil Singer. The author thanks Joel Slackman, also of CBO, for his help and advice. Patricia H. Johnston and Paul Houts edited the manuscript; Rebecca J. Kees prepared it for publication.

Edward M. Gramlich
Acting Director

March 1987

SUMMARY

In the early 1980s, military recruiting experienced such a striking improvement that, in November 1983, the Secretary of Defense declared an end to the "experiment" of the all-volunteer force. "We know now that an All-Volunteer Force can succeed," he said, "and we know what it takes to make it succeed." With a substantial drop in the size of the enlistment-age population pool still ahead, the Secretary's assessment was not shared by all. In the years since then, however, recruiting has continued to improve.

Improvements in recruiting have been particularly impressive for the Army, the service that traditionally has had the greatest difficulty in attracting recruits of high quality. By 1981, the Army had joined the other services in achieving a larger percentage of high school graduates among its recruits than is present in the youth population pool from which it draws. Since 1983, its percentage of high-aptitude recruits--those scoring above the 50th percentile on the Armed Forces Qualification Test (AFQT)--also has exceeded the percentage in the youth population. In 1980, half of Army enlistees were in "category IV" (10th through 30th percentile on the AFQT); by 1986, the proportion was under 5 percent. A large part of the Army's success appears to stem from a new recruiter management system, suggesting that much of the improvement will persist regardless of the state of the civilian economy.

Although the enlistment-age populations have fallen nearly half-way to their mid-1990s trough, the decline has had little effect on enlistments. Recent research on manpower indicates that population changes do not lead to equal percentage changes in enlistment levels for "high-quality" males--high school graduates of above-average aptitude, the most difficult group to recruit. The remaining population decline--about 15 percent from fiscal year 1986 through the mid-1990s--would reduce high-quality male enlistments by only about 5 percent. When the projected stability of total accession requirements is also considered, the mid-1990s should see a return to recruit quality levels at or somewhat above those of fiscal year 1982, which by historical standards was a very successful recruiting year.

Other factors could make recruiting better, or worse, than the 5

percent fall would indicate. With the growing labor force participation of women, the earnings and employment prospects of young men appear to have been diminished; and the Bureau of Labor Statistics predicts further growth in female employment through 1995, which could help recruiting efforts. Smaller youth cohorts could raise the earnings of young workers relative to those of older workers, however, which would tend to hurt recruiting. Holding military pay raises below private-sector increases would both reduce high-quality enlistments and, through reduced retention, increase accession requirements.

A major buildup in forces would affect recruit quality more adversely. A 10 percent end-strength increase phased in over three years, for example, would increase Army accession requirements by roughly 25 percent, forcing the Army to devote more of its recruiting resources to simply meeting overall numerical goals. Even with an increase of this magnitude, however, the quality of Army recruits would still easily satisfy the Congressionally imposed constraints--less than 20 percent in category IV and at least 65 percent high school graduates.

Recruit quality reached a peak in the last few years that probably will not be approached again in this century, but this does not mean that quality should be a major concern in the 1990s. Although some of the gains of recent years will probably be reversed, Army recruits, in particular, will include a higher percentage of high school graduates and will achieve higher average aptitude-test scores than the overall civilian population of enlistment-age youth.

INTRODUCTION

In an address delivered in November 1983 at the Naval Academy, Secretary of Defense Caspar Weinberger declared: "...the experiment is over. We know now that an All-Volunteer Force can succeed, and we know what it takes to make it succeed.... Therefore, from today it will not be the policy of the Department of Defense to speak of our military as the all-volunteer armed forces.... Our men and women in uniform...are simply the armed forces...."

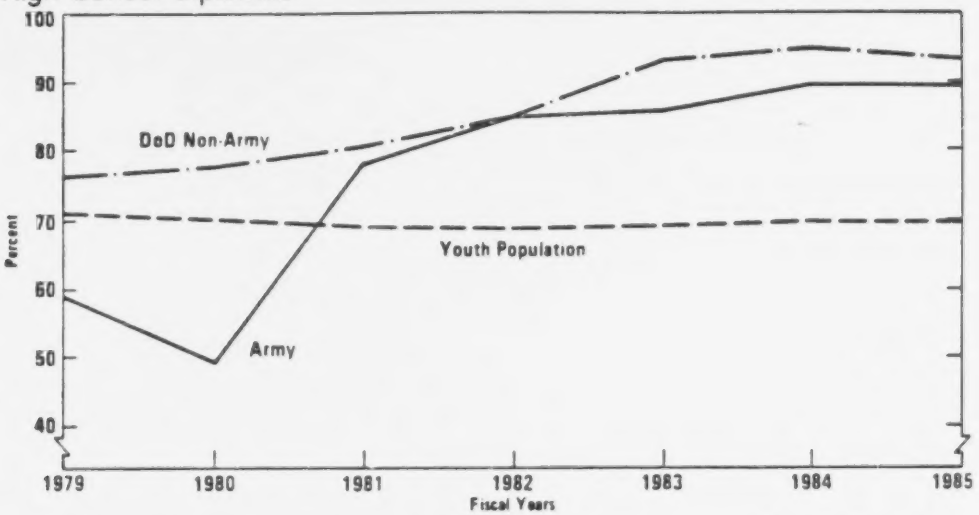
That assessment, coming not long after two disastrous recruiting years, was not shared by all. In 1979, the active services had fallen 7 percent below their recruiting goals, and in 1980 fully half of all Army enlistees scored in category IV on the Armed Forces Qualification Test (AFQT), below the 31st percentile among American youth. Furthermore, declining youth populations raised the possibility of additional shortfalls in the quantity and quality of recruits.

Supporting Secretary Weinberger's declaration was the turnaround staged by Army recruiting in 1981 and 1982. That service traditionally had the greatest difficulty of all the services in attracting recruits with high aptitudes and high school diplomas, making its recruiting success a good measure of total Department of Defense (DoD) success. Equipped with new enlistment incentives, a new scoring table for the enlistment test that gave accurate information on the aptitudes of applicants, and a vastly improved system of recruiter management, the Army had increased its intake of male recruits with above average aptitude from 25 percent of its male recruits in fiscal year 1980 to 47 percent in 1982. The Army percentage of male high school graduate recruits, who make better soldiers because they are more likely than nongraduates to complete their initial enlistment tours, had risen from 49 percent to 85 percent over the same period.

THE ARMY'S ENLISTMENT BOOM

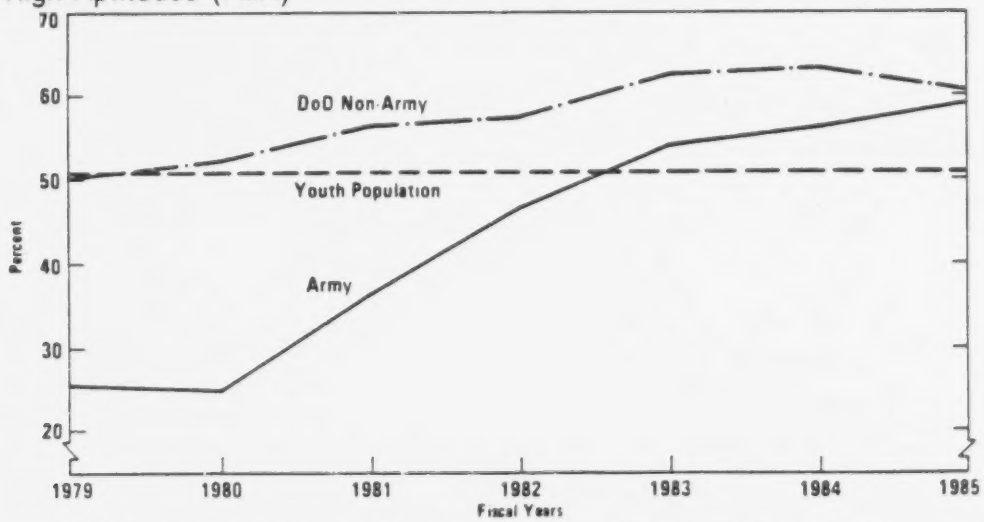
Figures 1 and 2 show the changes in the quality of Army male recruits from 1979 to 1985, and compare them with a combination of the other three services and with the general youth population. The percentage of high school graduates among the Army's male recruits exceeded the national high school graduation rate for young men (roughly 70 percent) in 1981, and in

Figure 1.
Percent of Male Recruits and Youth Population with High School Diplomas



SOURCE: Congressional Budget Office from Defense Manpower Data Center; and U.S. National Center for Education Statistics, *Condition of Education* (1986).

Figure 2.
Percent of Male Recruits and Youth Population with High-Aptitudes (I-IIIA)



SOURCE: Congressional Budget Office from Defense Manpower Data Center; and Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics), *Profile of American Youth* (1982).

1982 equaled the rate of the other services' recruits. The Army's percentage of above-average male recruits--those who score at or above the 50th percentile on the Armed Forces Qualification Test (AFQT)--exceeded the rate in the male youth population in 1983 and continued to rise afterward. 1/ Not shown in the figures, but equally important, was the decline in category IV enlistees; by 1982, they accounted for well under one-quarter of Army recruits and by 1986, for less than 5 percent. When this improvement in the quality of Army recruit quality is measured against the pool of young men actually available, it appears even more striking. Many of the brightest high school graduates go directly to college, without a break, so that the available pool actually had even lower graduate and high-aptitude percentages than those shown in the figures.

Two additional points are also important to note in connection with the figures. First, population trends had very little to do with the changes in recruit quality. The Army's 1982 recruits came from a pool of 18- to 21-year-old males that was less than 2 percent larger than in 1980, and the continued gains from 1982 to 1985 occurred despite a drop in the pool of almost 11 percent. Second, other factors affecting all four services--changes in the state of the economy, more competitive military pay, more favorable attitudes toward military service--explain little of the Army's success. The effects of these common factors can be seen in the much more modest movements of the "DoD Non-Army" lines. Explanations for the Army's greater improvement, then, must be sought elsewhere.

Causes of the Boom

There are two obvious candidates to explain the Army's dramatic improvement, factors that distinguish it from the other services: (1) the introduction of the Army College Fund (ACF) in fiscal year 1981 and (2) major reforms, begun in 1980, in the way the Army manages its recruiters. The ACF is a set of Army-only enhancements to the DoD-wide basic program of postservice education benefits, which at that time was the Veterans' Educational Assistance Program (VEAP). The ACF more than tripled the dollar value of the package for eligible recruits, the so-called "high-quality" enlistees who possessed both of the quality attributes shown in Figures 1 and 2: a high school diploma and an AFQT score at or above the 50th percentile.

---

1. Males score slightly better than females on the AFQT, which explains why the "youth population" line lies above the 50 percent point.

The ACF program, which began as part of a controlled experiment, increased high-quality enlistments by an estimated 9 percent. The Army has contended that the longer-term effect was somewhat greater, but even the Army's own estimate makes it clear that most of the improvement in its recruiting must be attributed to some factor other than the ACF.

The second change, the Army's reforms in the management of its recruiters, greatly improved the Army's ability to determine the *types*, rather than merely the *numbers*, of its recruits. Under the changes, recruiters are deemed successful only if they achieve all their separate quotas for high-aptitude graduates, high-aptitude nongraduates, and so forth. Traditionally, individual recruiters had been thought to have little influence over the numbers of high-quality male enlistees they brought in, because it was believed that those numbers were determined by such outside factors as pay, unemployment rates, population, and incentives like the Army College Fund. Research performed at the Rand Corporation 2/ and confirmed by independent work at the U.S. Military Academy, 3/ however, has established that of the Army's one-third increase in its high-quality male enlistees from 1981 to 1982, roughly half is attributable to the reforms in the management of recruiters and the higher quotas for high-quality male recruits that the Army Recruiting Command placed on its recruiters.

Recruiting gains stemming from changes in internal Army management practices should not be easily reversed by factors outside the Army's control. Nonetheless, a substantial decline in the pool of enlistment-age youth still lies ahead. The remainder of this paper examines the implications of that decline for military enlistments.

YOUTH POPULATION DECLINE

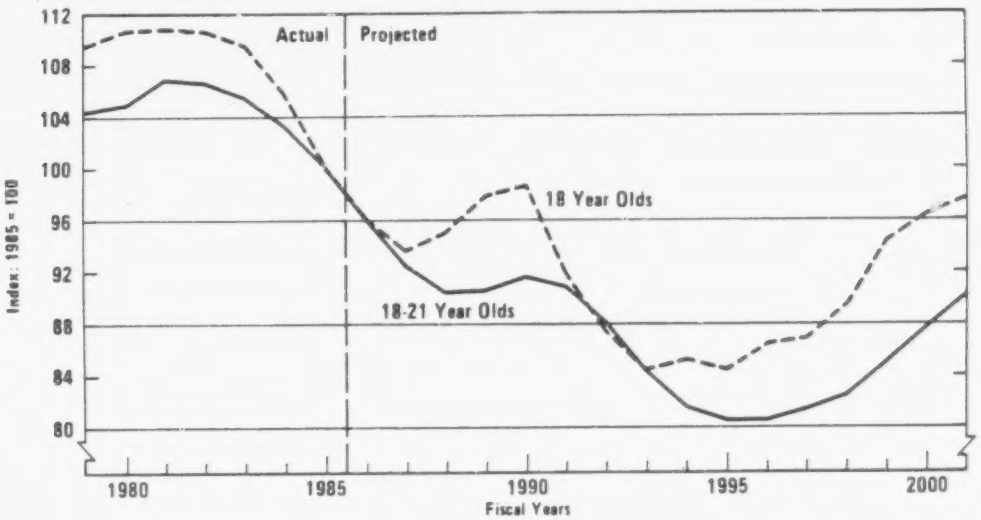
Figure 3 shows the paths of two measures of the male population pool for the recent past and projected into the future, each measured as an index with 1985 as the base year. The dashed line is for the 18-year-old age group, the youngest age group from which the services draw significant

---

2. James Dertouzos, *Recruiter Incentives and Enlistment Supply* (Santa Monica, Calif: The Rand Corporation, May 1985).

3. Thomas V. Daula and D. Alton Smith, "Recruiting Goals, Enlistment Supply, and Enlistments in the U.S. Army," in Curtis L. Gilroy, ed., *Army Manpower Economics* (Boulder and London: Westview Press, 1986).

Figure 3.
Population Trends for Enlistment-Age Males



SOURCE: Congressional Budget Office from U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-25, "Population Estimates and Projections," various numbers.

numbers of recruits--22 percent in 1982. The other line charts the course of a broader age group--18 to 21 years old--that supplies more than three-quarters of new recruits.

The "Baby Bust"

The line for 18 year olds shows clearly the past and projected effects of the so-called "baby bust" on military-eligible population pools between 1981 and 1994. The key point is that by 1985 the effects of well over a third of the total decline in the number of 18 year olds had already been felt, and by 1986 more than half. The picture is not quite as favorable when the broader age group is examined because averaging 18 year olds with older youth delays the bottom of the trough. Nonetheless, even for this broader "prime enlistment-age" group, more than 40 percent of the total decline had been realized by fiscal year 1986.

That much of the total fall has already occurred does not diminish the magnitude of the population decline still lying ahead. Male enlistments in the mid-1990s will have to come from a pool that is 15 percent smaller than that which fed enlistments in fiscal year 1986.

Population Changes and Enlistments

Virtually all of the many studies of enlistment supply that have been conducted over the last 10 years have examined the effect of population changes on the levels of high-quality male enlistments. It is now generally agreed that the effect is not one of equal percentage changes. Rather, most recent studies would place the enlistment change at no more than one-third the size of the population change--that is, the 15 percent decline in the youth population through 1994 should reduce high-quality male enlistments by only about 5 percent.

The most common explanation of this phenomenon is as follows: as the population pool declines, each recruiter will have a smaller "market" in which to "sell" his or her service, but this means that he or she will be able to devote more attention to each potential recruit within that market. Thus, while the *number* of high-quality recruits each recruiter will be able to attract will probably fall, the enlistment *rate*--the percentage of eligible high-quality youths who enlist--can be expected to rise.

If current recruiter levels are maintained, then two-thirds of the coming population decline should be offset by a greater intensity of recruiting contacts.

PROSPECTS FOR HIGH-QUALITY RECRUITING

Because the population decline is expected to reduce high-quality male enlistments by only 5 percent, the services' prospects for maintaining high levels of recruit quality through the 1990s look fairly bright. Figure 4 shows historical and projected levels of high-quality male enlistments for the Army and for the other three services combined. 4/ It is more difficult to project recruitment levels for other groups, such as lower-aptitude high school graduates and high-aptitude nongraduates, because the services can control the mix among these groups. The projections for high-quality males, however, give a good indication of what will happen to overall recruit quality on the two separate measures of graduate and high-aptitude percentages.

Both sets of projections in Figure 4 incorporate the decline in the youth population, and both assume that military pay will keep pace with private-sector pay. The diverging projection lines reflect alternative assumptions about civilian unemployment: the lines denoted "stable economy" assume that the fiscal year 1986 unemployment rate (7 percent) will persist, and the "recovering economy" lines are based on current CBO baseline projections for the unemployment rate (a drop to 6 percent by 1991).

The most notable feature of the projections for the 1990s is that similar high-quality enlistment levels occurred as recently as 1982. The Army's recruiting trough in fiscal years 1994 through 1996 will be well above what that service achieved in 1982. The other services combined will also remain above their 1982 levels, unless the projected economic expansion occurs and unemployment remains at low levels into the mid-1990s.

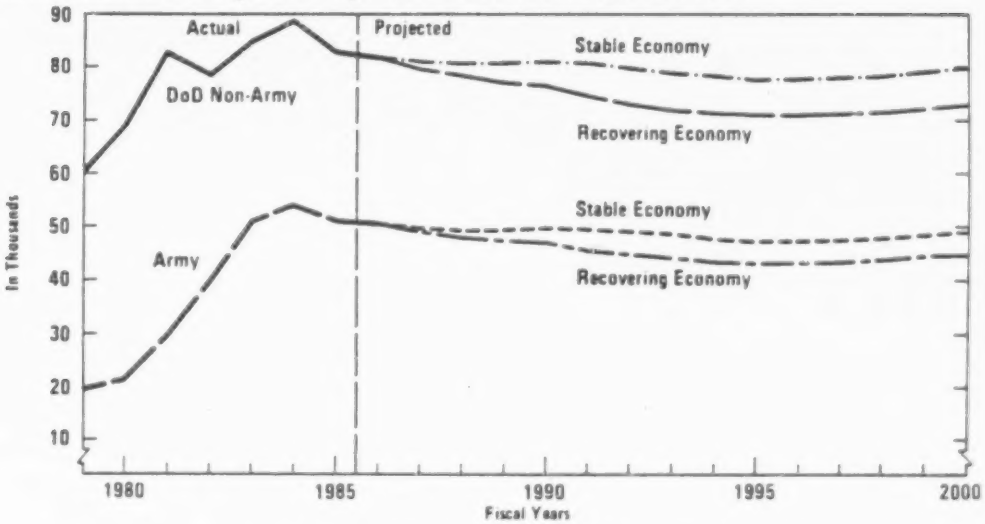
The range of uncertainty around the projections is fairly large, but higher enlistment levels appear to be more likely than lower levels. For

---

4. The data underlying the figure are internally consistent, but they may differ from officially released totals because of changes in scoring the AFQT.

Figure 4.

Enlistments of High-Quality Males Without Prior Service



SOURCE: Congressional Budget Office based on actual data from Defense Manpower Data Center.

example, one recent study--performed for the Air Force by a group of well-respected labor economists--found that the combined effects of the various mitigating factors they identified would actually increase Air Force high-quality male enlistments in 1993 by 3 percent above their 1984 level, and lead to only a 1 percent decline for the Army over the same period. 5/ That prediction may prove to be too optimistic, but it serves to show that the projections in Figure 4 should not be viewed as upper bounds.

In fiscal year 1994, high-quality males should account for more than 35 percent of Army enlistees without prior service, and nearly 39 percent if unemployment then is at today's level. Although either percentage would be down from the 43 percent of 1985, it would still be much better than the 13 percent figure of 1980. For the other services combined, the projected improvement over the 1979-1980 period will not be as impressive--from 36 percent in fiscal year 1980 to 42 percent to 46 percent in 1994--but the percentage will be even nearer to the 46 percent achieved in the peak recruiting year of 1985.

OTHER FACTORS AFFECTING ENLISTMENTS

As suggested by the assumptions mentioned in the above discussion of enlistment projections, the decline in the youth population is not the only factor that may affect high-quality enlistments in the future. Other forces now at work, or that might operate in the next several years, could either improve or worsen the enlistment picture presented in figure 4. This section first examines three factors that could help recruiting, and then turns to three that could hinder it.

Factors That Could Help Recruiting

Female Labor Force Participation. During the 1970s and early 1980s, growing numbers of women entered the labor force. The female labor force participation rate--the percentage of women 16 years and older who are either working or actively looking for work--rose from 46.3 percent in 1975

5. Syllogistics, Inc., and Unicon, "The Prospects for Military Enlistments: An Assessment," Annex Three to: United States Air Force, *An Analysis of the Effects of Varying Male and Female Force Levels* (1985).

to 51.5 percent in 1980 and to 53.6 percent in 1984. Although research on how this growth affected the job prospects and earnings of young men is not conclusive, it does suggest they were impaired by the increased competition. Thus, this labor market trend probably has aided military recruiting by holding down wages in entry-level jobs, by contributing to youth unemployment, and, perhaps, by limiting the access of young men to more attractive white-collar careers.

Growth in the female labor force participation rate should slow in the next several years, but no downturn is expected. The Bureau of Labor Statistics (BLS) projects that the rate will rise another 5 percentage points by 1995, to 53.9 percent. Most of this growth will stem from increased participation among women in their prime working years, with a 10 percentage-point increase for women aged 25 to 54. The growth should continue to depress job opportunities and relative wages for young men, although the evidence on this score is not conclusive.

Youth Unemployment. Young men have not shared in the recent economic recovery as fully as might be expected. In 1977, during the previous recovery, 7.1 percent overall civilian unemployment was associated with 17.3 percent unemployment for male teenagers (aged 16 to 19). In 1985, with civilian unemployment at 7.2 percent, the unemployment rate for male teenagers stood at 19.5 percent. The civilian unemployment rate fell to 7.0 percent in 1986, but the rate for teenage males rose. If this apparent trend toward higher rates of teenage unemployment continues, recruiting could be better than projected.

Regardless whether the trend continues, it is doubtful that teenage unemployment will drop in the near future to the rates that prevailed in the early 1970s. Notions of how low an unemployment rate is sustainable have changed in recent years, as reflected in current CBO economic projections that show the overall unemployment rate falling only to 6 percent in the early 1990s, rather than the 4.9 percent rate that prevailed in the first year of the all-volunteer force.

Accession Requirements. The third factor that should help recruiting--the projected steadiness in total accession requirements--will have little effect on the numbers of high-quality recruits attracted, but will affect the percentages of high-aptitude and high school graduate enlistees. Requirements for nonprior-service enlistees fell dramatically during the late 1970s and early 1980s, from roughly 400,000 per year in fiscal years 1975

and 1976 to 300,000 in 1982 and 1983. Rising retention rates among service personnel explain most of this drop. Retention improved as service members who had entered without any pressures from a draft reenlisted at higher rates than their draftee and draft-induced predecessors. Further improvements in retention occurred in the early 1980s as a result of high civilian unemployment and improved military pay.

The enlisted forces in each of the services will increase in seniority during the next decade. This will reduce losses and help to maintain high retention as more enlisted personnel reach the point at which the attraction of retirement at 20 years of service becomes strong. In addition, the Navy's current end-strength buildup will be completed by about 1992. As a result, CBO now projects that requirements for new enlistees should remain at or below the 300,000 level through the 1990s. These requirements, modest by historical standards, mean both that pressures to achieve overall accession quotas will not overwhelm the services' quality goals, and that there will be no dilution of a fixed high-quality supply by larger numbers of total recruits.

Factors That Could Hurt Recruiting

Rise in Youth Earnings. Not all forces will work to offset the effects of the population increase, of course, nor are all the trends described above certain to continue. Even if the BLS projections of female labor force participation prove correct, for example, the employment and earnings of young men might not be any more adversely affected than those of other demographic groups. If this effect is weak or nonexistent, then another labor market force may predominate: the earnings of young men and women may rise, relative to those of older workers, as the numbers of young people available for work falls. According to one study, there could be a 6 percent relative pay increase for new labor market entrants between 1982 and 1990. 6/ Like the population decline that lies behind it, however, much of this change should already have occurred. The remaining decline could be expected to reduce high-quality male enlistments by about 2 percent or 3 percent, assuming military pay keeps pace with changes in average private-sector earnings.

---

6. Hong Tan and Michael Ward, *Forecasting the Wages of Young Men* (Santa Monica, Calif.: The Rand Corporation, May 1985).

Military Pay Not Competitive. A failure to match private-sector pay increases would hurt recruit quality in two ways. First, it would directly reduce high-quality enlistments. A 2 percent raise in fiscal year 1988, for example--half the increase proposed by the Administration--would reduce the number of high-quality male enlistments by roughly 2 percent. The second effect would be indirect; reduced reenlistments would increase accession requirements (given end strengths), also by about 2 percent. The two effects combined would reduce the percentage of recruits who are high-quality males by a little more than 4 points, nearly equal to the direct effect of the youth population decline. Unless the relative pay cut were restored in later years, this reduction in the quality of recruits would continue indefinitely.

Force Buildup. Accession requirements would not remain stable if a large and rapid buildup in the enlisted forces were necessary, possibly as a response to worsening international tensions. In the short run, and without additional resources, the services would have to achieve their expansions by dipping deeply into the pools of potential recruits that have largely been avoided in the last several years: high school graduates in category IV and nongraduates. 7/ Some expansion of enlistments from the group of high school graduates who score just below the median on the military aptitude test might be possible, as might the enlistment of more high-aptitude nongraduates, but the overall expansion would probably divert recruiters' attentions from the high-quality pool that they have worked so hard to attract in recent years. Thus, not only the percentage of high-quality recruits, but also their numbers, could be expected to decline.

A specific example of such a buildup is a 10 percent end-strength increase achieved in equal stages in fiscal years 1990 through 1992. Although perhaps not large by some standards, this increase would amount to nearly 180,000 additional enlisted service members, enough to support a 50 percent increase in U.S. forces stationed in Europe. It also lies within the range that could be achieved without recourse to conscription, albeit with a reduction in recruit quality.

Accession requirements during the three years of such a buildup would be on the order of 25 percent to 30 percent greater than currently projected

---

7.. Eventually, increases in reenlistment bonuses, and time for them to affect the size of the career force, would permit a buildup without placing large demands on the services' recruiting commands.

for those years, and roughly 15 percent greater than projected for several years afterward. To illustrate the magnitude of the effect, the Army would have to recruit an additional 35,000 to 40,000 people in the peak year. Allowing for some increase in female and prior-service enlistees and for some loss in high-quality males as recruiting efforts were diverted toward bringing in sheer numbers, roughly 35,000 additional lower-aptitude and nongraduate males would have to be recruited in the peak year. This number would be about 20 percent of the Army's total requirement for new recruits, meaning that the requirement could be achieved while holding category IV recruits to 10 percent of the total and nongraduates to less than 25 percent. Quality would certainly be lower than it is today, but neither of the Congressional constraints on quality--less than 20 percent in category IV and at least 65 percent high school graduates--would be violated.

CONCLUSION

At end of the the 1970s, there was real cause for concern about the viability of the all-volunteer force. The quality of recruiters was very low, particularly in the Army, and projections of decline in the size of the youth population pool from which the services draw pointed to greater trouble ahead. The dramatic turnaround of Army recruiting in the early 1980s stilled the immediate concerns, but could not eliminate the threat posed by the demographic trends.

From the current vantage point, the future looks fairly bright. Research now indicates that high-quality enlistments do not change in the same proportion as the youth population pool. Thus, CBO enlistment projections show recruit quality diminishing somewhat, but remaining better than the level obtained as recently as 1982. The number of high-quality male enlistments should drop in the mid-1990s to between 5 percent and 13 percent below current levels, depending on the state of the economy. With accession requirements stable at levels well below those of the 1970s, however, the enlistment decline should not be cause for alarm. The Army, for example, could accommodate even the more severe drop by reducing its percentage of high school graduates (males and females) from 91 percent to 85 percent, and increasing its intake of recruits in category IV from 4 percent in 1986 to 6 percent or 7 percent. Considering that only about 70 percent of young people now graduate from high school, and fully 30 percent fall in category IV and below, Army recruiting (and that of the other

services) should continue to appear impressive.

Various factors could help or hurt recruiting. One group of analysts sees the helpful factors as so strong that they actually predict an increase in Air Force high-quality male enlistments. This prediction may be too optimistic, and such policy changes as a sharp decline in the relative pay of military personnel or a substantial force buildup could significantly reduce average recruit quality. A 10 percent end-strength increase in the early 1990s would not be enough, however, to push even Army recruit quality below the aptitude and high school graduate floors set by Congress. Factors not under government control, such as trends in civilian labor markets, could affect recruit quality, but the probable magnitudes of these effects does not now seem to be large. Recruit quality in the 1990s may not be as high as today, but Army recruits, in particular, should continue to include a higher percentage of high school graduates and to achieve higher aptitude test scores, on average, than the overall civilian population of enlistment-age youths.